EXHIBIT I-A

Bellevue and Kirkland
Interview Summaries

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Interview Summary

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Bellevue and Kirkland
Summary

The interviews were of significant value in framing stakeholder perceptions, highlighting potential opportunities, and identifying connectivity efforts to date. A common theme across the interviews was the desire for and recognition of the benefits of collaboration among schools, governments, hospitals, and other public sector entities and institutions. Support for either Bellevue or Kirkland offering connectivity services (retail or wholesale) to businesses or residents was notably mixed. Some felt that adequate connectivity services are available and affordable in the region, and questioned the appropriateness of public sector involvement in the provision of these services. Some of those who felt that public sector involvement was appropriate emphasized that if retail or wholesale services were to be offered, it would be highly desirable that the offering was structured as an alliance or partnership between the public sector and private sector.

Specific insights and observations include:

- Many of the interviewees were intrigued with the possibility of having wireless "hot-spots" in public areas. The reception of the "hot-spot" concept was stronger in Kirkland than in Bellevue (objective: make the area a more comfortable environment).
- The State of Washington's Senate Bill 6598[1] may impact the available alternatives that Bellevue of Kirkland can consider (i.e., spur new legislation, limit pole attachments depending upon the definition of end-user, etc).
- The possible implementation of on-line video monitoring was viewed with mixed reactions. Concerns included the "big-brother" perception and the possibility of providing too much information to the general public. Benefits included not only being able to view schools for security, but also checking to see if the parks have activity (i.e., are there other children to play with?)
- Each of the three[2] K-12 school districts see benefits in connecting their schools with fiber links and would like to have them connected. The desire for fiber links is not driven by considerations of cost avoidance but by the desire to support new applications. The performance of the T1 links currently used to connect the schools limits the type of applications that may be supported within and between the schools. Lake Washington District and North Shore District are actively pursuing the goal of connecting each of their schools with fiber. All three of the districts also saw potential benefits in fiber interconnection between the districts, K20, and the community colleges. In addition, the high schools (specifically) are very interested in having video monitoring fed to the police stations. A possible constraint lies in the fact that building a network leveraging existing school fiber links may restrict the future connection of private sector sites to the network due to legal issues.
- The community colleges (CC) have fewer facilities (locations) than the K-12 districts, but still desire fiber connectivity. Both community colleges felt the need to connect to the University of Washington (UW), the CIS, selected high schools, and potentially the medical centers. In addition, Lake Washington CC is planning to open a satellite facility in Redmond in the next 12 months, which they would very much like to connect to their primary site.
- Overlake and Evergreen Hospitals desire connectivity between their facilities, to the UW, and to the community colleges. In addition, both hospitals see benefits in providing more affordable broadband connections to clinics and doctors' offices. However, since Evergreen

[1] See Section 5.4 for an overview of SB6598.
[2] Bellevue, Lake Washington, and North Shore

and Overlake are public institutions, they cannot financially support a given physicians connection.

- Service from commercial wireless carriers (cellular and PCS) is unreliable due to significant coverage area gaps and dropped calls during handoffs between cell sites.
- A common concern is the availability of adequate capacity on a given link, not the availability of cable modem, Digital Subscriber Line (DSL), or T1 connectivity. The currently offered data rates of these existing "high-speed" services are not considered to be adequate to support the desired mix of applications. Lack of adequate capacity does in fact currently constrain the types of applications that a given organization can pursue.
- Puget Sound Energy (PSE) has a contract to have its electric meters read over a radio frequency (RF) network built and operated by an outside provider (a division of Schlumberger). This network uses a licensed 928/952 MHz frequency. Experience to date shows that between 80% and 90% of all meters can be read via the wireless link. The remaining meters have proved difficult to read via this wireless network, even though only a relatively low data rate is used.[3]
    - A wireless Internet offering running at broadband speeds is likely to have even poorer propagation characteristics. PSE's real-world experience will be taken into account in any planning for a broadband wireless offering.
    - Schlumberger was aggressively pursuing offering an expanded mix of monitoring services over their network 5 years ago. Activities not only included the sale of meter reading services, but product development in partnership with Honeywell aimed at home security and other sensor monitoring offerings. This raises a question – is there a network already in place in Bellevue and Kirkland that could be leveraged by each City to provide enhanced monitoring services?
    - PSE is interested in Broadband Power Line (BPL) technologies, but is skeptical as to the existence of a viable business case. Given the demonstrated difficulties with ubiquitous RF propagation, can BPL be used instead of or as augmentation to a wireless approach?

[3] Moderation techniques that provide higher data rates to have smaller coverage footprints for a given transmit power level.

Bellevue Community College (BCC)

- Three locations in Bellevue
  - Factoria (2 T1's: 1 for data; 1 for voice)
  - Main Campus (6 T1's to K20 plus voice (D3))
  - North Campus (1 T1 for data; 2 T1s for voice)

- Looking at INet (King County) dark fiber

- Center for Information Service (CIS)
  - Provides data for 35 community colleges across the state
  - Two blocks from North Campus
  - Will be having administration server at CIS

- Average cost for a T1 is $2,500 per year

- New applications (given better connectivity)
  - Webcasting for on-line courses (audio is ok; video is needed)
  - VoIP is planned
    + About two years left on voice contracts
    + 1,500 plus telephone handsets

- Total enrollment is 23,000
  - Majority from east-side; some from Seattle

- Distance Education Program
  - 12,000 people enrolled today
  - Broadcast (Channel 28) and mail tapes
  - Do some videostreaming - short clips
  - Some faculty live outside of the state

- 26% of funding is from the state (including tuition); remaining 74% is from grants and other sources
  - Distance Education is self-supporting (including national grants)

- Better connectivity to the high schools is desirable
  - Share classrooms
  - Enhanced courses
  - Etc.

- Have 2 wireless networks (1 for students and 1 for administrator)
  - Part of Technology fee ($3.50 per credit, for first 10 credits)
  - 802.11b

- Monitoring Applications
  - Video monitoring – collaborate with city? School district?
  - LCD projections being stolen
  - HVAC monitoring

- Nancy Peterson is contact at CIS

- Would like centralized storage for video-on-demand. K-12 may have needs as well.

Collaboration and aggregation between public entities in the region is the first step. Having fiber connection to the University of Washington will benefit all community colleges and school districts. BCC will realize operating savings with a fiber connection connecting their three locations in Bellevue ($25,000 plus annually) and allow for more creativity in application development. BCC is not likely to lead a connectivity effort, but should support efforts to enhance the regions connectivity.

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Bellevue Downtown Association

- Non-profit 501C corporation
  - Promote ride-sharing
  - Parking management for smaller businesses
  - Advocacy group for downtown members
  - Members include property owners and businesses

- Connectivity issues appear to be limited
  - Cost/benefit vs. availability
  - Issues are more relative to cost of getting connection to building vs. availability
  - Reliability and capacity appear to be ok (but have not dug into the question)
  - Qwest is getting better to work with (responsiveness)
  - Inconsistency on availability of residential service (user perspective regarding Comcast)

- Not aware of any businesses moving out of downtown, or not moving in due to connectivity

- Building owners are likely to be more involved in working with providers than the tenants are

- Students use King County Library Wi-Fi from parking lot
  - Is security/use a concern?

- Hot spot in Bellevue Square

- Majority of hotel stays are due to business travelers
  - Most are providing high-speed connectivity
  - Hotels have done well during 9-11 and dot.com travel decline

- Looking to attract 10,000 to 15,000 new residents to downtown in the next 20 years
  - Ubiquitous wireless access would be a great marketing tool
  - Have 3,700 to 3,800 units today
  - Condo insurance issue limiting new developments (being addressed in legislation)

- Types of businesses downtown
  - Financial and insurance
  - Professional services (lawyers and accountants)
  - Retail (Bellevue Square and outside)

- New transient center being planned
  - Info centers/screens in walkways would be helpful

Downtown Bellevue does not appear to be underserved. Gaps are likely to be cost (affordability) issues with smaller businesses. Promoting a City of Bellevue fiber and having wireless hot spots may help from a marketing perspective. Bellevue today is hampered by a lack of a clear image (what is different in Bellevue when compared to other communities in the region). Tacoma already has the “most wired City in America label”, what angle will Bellevue have?

Bellevue School District

- 15,000 students

- 2006 is next operational levy. Last levy was
  - $28M over 5 years (technology)
  - $324M over 20 years
  - PR package is important in passing any levies

- 33 total sites
  - 7 connected with fiber (3 offices, 4 schools) (need clarification for sites that are connected)
  - 4 T1s to each high school (data)
  - 3 T1s to each middle school (data)
  - 2 T1s to each elementary (data)
  - Each school has a 1/2 T1 for voice

- Nortel option II-PBx purchased in 1997
  - Will look at VoIP in 3 years

- Lack of connectivity capacity has limited programs (applications)
  - Noon to 2 PM network is on its knees
  - Links to resources (streaming video)
  - Assessments on line
  - Real-time interconnectivity between schools
  - 2 to 4 video connections overloads network

- 190 servers are managed today, on a 3 to 4 year replacement cycle
  - Backup is starting to slow down the network during the evenings

- Increased connectivity capacity is likely to offer efficiency improvements with the staff

- Piloting grades on-line
  - Parent view via web interface

- Selling point with district
  - Workload issues with the teachers
    + Statewide pay scale (teachers cannot afford to live in Bellevue)
  - Improved working conditions
  - Take the heat off the teachers

- Give parents information and be able to support students' education process
  - Microsoft class server

- Video security monitoring
  - Digital/Phillips equipment
  - Image every few sections
    + Couple of locations activated by motion
    + Low level light cameras

- Willing to use capital to avoid Maintenance & Operational (MO) costs
  - MO from general fund (set by legislators)
  - Capital fund (set by voters)

- Did not go with King County INet due to ownership issues

- Video monitoring of classrooms?
  - Not likely due to big brother concerns and teachers' unions

- Video conferencing important for advanced classes (foreign language, other)
  - Combine students in distributed locations

- How much capacity is needed?
  - At least 1 Gbps to each school

- 802.11b wireless network for teachers in each school (moving to 802.11g)

- Mobile computer lab
  - Wireless cart to rooms rather than CAT5

- Across district –
  - Some collaboration, some competition
  - Specialized classes?

- Voters support will be critical
  - Digital divide
    + Computer recycle
    + ISP subsidizes
    + Wireless baseline?

- 550 students in largest school
  - $600K to operate an elementary school
  - $1M to operate a high school

Connectivity is an issue today and will limit the effectiveness of the Bellevue School District if improvements are not made. Better and improved connectivity can reduce teacher workload and help retain teachers. Bellevue School District is extremely interested in working with the city to obtain fiber access and may be willing to participate in the fiber capital expenditure. Voter acceptance, however, is critical for this participation. A condominium fiber model may need consideration to keep ownership lines clean (ability to support commercial traffic may not be allowed if fiber funded with school levy).

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Center for Information Services (CIS)
Washington Community and Technical Colleges (WCTC)

- Primarily a computing services provider, offering 'back office' services to WCTC
- Doesn't directly provide connectivity, but serves as network consultant and acquisition advisor to WCTC when it is necessary to obtain broadband connectivity
- CIS Service Center is located in Bellevue
- Closest end users served from CIS Service Center are:
  - Bellevue Community College
  - Lake Washington Technical College
- Effectively all broadband connectivity supporting WCTC is obtained from Washington State K20 network
- CIS has been approached by King County I-net (a public sector provider of connectivity to municipal sites) to get involved with municipal connectivity but this initiative is still under discussion
- Bellevue Community College is in need of additional connectivity beyond their existing multi-T1 links
- Lake Washington Technical College expansion into Redmond is expected to be significant new load
- K20 Program Office is negotiating with King County I-net concerning ways to meet this need
- K20 network is shifting to a data rate based structure instead of a structure oriented to multiples of T1 capacity
- CIS is increasingly shifting to a computing services provider role, reducing its connectivity consultant/advisor role
- As CIS shifts to computing services provider, significantly more broadband capacity will be needed at CIS Service Center – from 3 T1 equivalents to more than 7 T1 equivalents
- University of Washington has a fiber loop project with route north of Lake Washington then south through the East Side
- K20 budget has been flat but improved price/performance has enabled them to do more with these funds.
- CIS has some ability to forecast connectivity needs but model is imperfect
- Major uncontrolled variable in CIS workload forecasting is student count
- CIS has some headroom on present connectivity links but is concerned and is watching loads closely
- K20 wants to provide links between institutions but would rather not provide links between multiple sites of the same institution

- Links between multiple sites of the same institution would be one case where CIS might recommend using a muni network or other non-K20 link

- CIS is also interested in alternate routes to handle surge traffic and backup requirements, routes that need not be K20 links

- Would be most interested in a pricing model where a very high capacity link was in place but the institution was only billed for the much lower amount of data actually used

- In case of surge or disaster institution would utilize and pay for additional capacity up to the maximum of the installed link, but would pay only a small fee for the over configuration until that capacity was actually used.

CIS presently serves as a network consultant and advisor to the technical colleges it serves. CIS has embarked upon a significant expansion of the amount of computing services work it does for the technical colleges and sees itself becoming primarily a computing services provider. CIS sees the demand for its computing services increasing due to the increasing number of students at the colleges while at the same time the number of sites to be served increases due to the addition of college branches. These factors cause CIS to see a definite need for higher capacity links and also for increased robustness and redundancy in the links it has. At the same time, CIS' primary resource for connectivity is becoming capacity constrained. While CIS is not currently in trouble, all these factors combine to make CIS very interested in the availability of alternate sources of high capacity connectivity.

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Metrovation
(Crossroads Mall)

- Crossroads Mall is:
  - 40 acres
  - 500,000 sq ft
  - Approximately 100 stores

- Comcast plant was 'across the street' but never brought over to Center

- Comcast is 'closed-minded'

- Only recently was connected to City network (I-net?)
  - Bringing cable into Center involved significant cutting and trenching of parking lot and sidewalk
  - Cable is connected to City Police site and one other City function in Center
  - No pressure on Center management to provide connectivity to other sites in Center

- Metrovation manages many other properties nation-wide; no pressure from tenants to provide broadband connectivity
  - Many tenants see no value
  - Those that do see value obtain connectivity on their own, many times through store headquarters

- Not aware of any market pressure on other management firms – no one is selecting Center based on availability of broadband connectivity within the center

- Sees connectivity as possible point of distinction, would like to provide as building service

- Would be more enthusiastic if choice of providers to Center tenants could easily be implemented

- Sees provision of connectivity by City or by public sector Utility as 'another way to gouge citizens'

- Declined entertainment cable at home, considers cost unreasonable.

- Connects to Internet via dial-up

- Feels public sector connectivity provider couldn't keep up with private sector in the areas of:
  - Financial and funding issues
  - Breadth of service offerings and service mix
  - Access to TV programs and movies

- Would be in favor of public sector offering if
  - Internet connectivity only, no TV or movie programming
  - Priced at or below low end of private sector offerings

- To determine proper direction, City needs to take into account the following:
  - Public meetings are not accurate expression of community attitudes but may be required for legal reasons
  - A well designed quarterly newsletter is valuable and is widely read
  - Proactive advertising campaign may be required in order to educate and convince
  - Neighborhood groups are valuable and a good sounding board for the evaluation of new ideas
  - Neighborhood groups can provide good input concerning penetration of existing service offerings
  - The opinion of neighborhood groups should be obtained when evaluating new services.

Notably, this mall space manager does not see the provision of high-speed links being demanded by mall space leasers. There is recognition of the possible value in some cases of having the capability for high-speed links in the mall, but it isn't felt that it is likely to make financial sense nor that the absence of high-speed links would be a deal-breaker. As a local resident, feels that present cable-based offerings are over priced and that price increases are out of control. Would be interested in cafeteria-style service plans if such were available.

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Equity Corporation

- Holds the largest area (square footage) of office space in downtown Bellevue.
  - Have 30% to 35% of Bellevue's square footage
  - Chicago-based organization

- Looked at offering "telecom" services within buildings five plus years ago. Was not successful in signing up customers. Concerns include:
  - Validity of marketplace
  - Perception of users
  - Not enough value added by a reseller

- Believe that the businesses are well served and do not have many concerns regarding telecommunications
  - Have an inventory of available services by property (will provide this list to Bellevue)
  - Small business (less than 450 square feet). Has a T1. Is not aware of any issues related to installation, fees, etc. (Cancer Lifeline - has 2 employees)
  - Expetia has a T3

- Washington Mutual has multiple buildings in region. Not sure if they represent an opportunity

- Bellfield Business Park may be underserved (SE 8th/112th?)
  - 17 buildings (450,000 square feet)
  - Executive suites, counseling, etc.
  - DSL might be available in park
  - Aware that many tenants are using dial-up

- Property Management Overview
  - Provide a safe, clean, and comfortable environment for tenants
  - Provide services on-line and in person
  - Have day-to-day contacts (leverage on-line to avoid additional staff requirements)
  - Use Nextel phones for all staff
  - Have properties in 11 markets including: San Antonio, Dallas, Houston, Seattle, Bellevue, and Austin.

- Intelligent people like the Pugent Sound region
  - If somebody wants to be in the east side, they will be on the east side
    + Lost a Corbus site to Seattle (they wanted a Seattle office, and the eastside was not viewed as Seattle)

- Have not lost a tenant due to telecommunications, however, now provide details on availability

- A stable publicly-owned network would help ensure economic viability
  - Attraction of tenants (area more appealing)
  - Give tenants more choices
  - Increase access to workforce

The perspective from Equity is that the existing providers are doing an adequate job in ensuring access to affordable connectivity services. However, they have not had discussions with small to medium size tenants regarding connectivity. Equity was supportive of the concept of a publicly-owned connectivity network, as long as it serves a niche, and private partnerships are considered.

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Evergreen Hospital

- Overlake Hospital connection is important
  - Central files/records
  - Sharing of files – Spokane example on how to overcome HIPA issues

- Evergreen is a community hospital
  - Non-for-profit, publicly owned, elected Board of Commissioners
  - County policy impacts operations (limits and helpful)
  - City stakeholders are the hospital stakeholders
  - Need to be cautious of providing private physicians items (legislative issue)
  - Some practices have developed good websites; others have not (we can't pay for sites; how can we get better consistency?)
    + Could IT program with Community College help?
    + Not all physicians have web access. Cost is an issue
      + DSL/cable modems work ok; dial-up does not

- Regional information network
  - Safer care; more accurate; less expensive
  - Convenient to patients and physicians
    + Radiology reads
  - Smart medical home
    + Chronic diseases (diabetes, etc.), medical training, flags for medication, etc.
  - Multiple practices responsible for a person's health
    + Can't share information
    + Need on-line access to patient's medication profile
    + In the short-term, improved patient information access may not offer malpractice insurance relief

- Connectivity improvements may benefit third party payers

- Medicaid is 35%; Medicare is 10%, low for a general hospital

- Interested in connections to:
  - Lake Washington Technical College
    + Library system
  - UW Children's Hospital downtown Seattle
    + Dedicated T1s today

- Broadcast of education programs is of interest
  - Local and out of state
  - Evergreen has a Parkinson's Center
  - Live surgeries

- Have 802.11 wireless in hospital. Investigating use of handhelds for medical staff

- Improving health education is important. PEG channel broadcast on healthcare delivery

- Look at Winona Health Clinics (on-line example)

Regional connectivity is a goal of Evergreen and Overlake Hospitals. Benefits may be realized from improved medication delivery, patient safety, and sharing of resources. The second issue is getting consistency among the physician offices in respect to connectivity services and use of the web for delivery of information. Evergreen has limited ability to offer assistance to physicians regarding these matters. Leverage of the Technical College and seeking telecommunication grants might help in development of a solution.

Fox Internet
(Wireless Provider)

- Major connectivity providers to Bellevue and Kirkland are:
  - Verizon
  - Qwest
  - Global Crossing
  - Level 3
  - ELI

- Line between Qwest territory and Verizon territory is roughly I-520

- Significant difficulties arise when one attempts to provision a connection across both vendor's territories.

- Fox Internet doesn't directly compete against the incumbent carriers since the incumbents are dominant in their offering categories

- Sees competitive local exchange carriers being 'crushed' by dominance of incumbents

- A municipal network offering carriage only would be welcomed as a new market entrant that might affect incumbent behavior

- A municipal network that offers carriage only might displace some services provided by incumbents but the offering might be even more valuable as a way for users to upgrade existing services without moving to much higher priced incumbent offerings

- There is value in an open network offering carriage to all

- Feels that municipalities wouldn't have the skill sets necessary to manage bandwidth well, thus is interested in carriage but not in provisioned services

- Feels that municipalities do have a function in helping with 'last mile' connections and also in providing prospective on the competitive landscape

- Available bandwidth in the area is adequate, but costs are not competitive

- A cost effective step-up offering for the existing T1 user is not readily available

- Major example of building complex equipped with fiber throughout from initial construction is Carillon Point in Kirkland. Verizon is primary provider to this complex with Fox as alternate.

- Both Level 3 and ELI have fiber rings in the Seattle/East Side area

- Backhaul out of Seattle/East Side area is from peering site in Westin Building, downtown Seattle

- Muni network might be useful as a foundation of a partnership to establish another alternate backhaul link to Westin Building

- Wireless is also an acceptable alternate high capacity link – example is existing wireless feed to Issaquah

- Several buildings in downtown Bellevue have clear shot to Westin Building and could be used for new wireless backhaul link

- While a carriage only offering would be of interest to Fox, end user customers Fox serves are interested in services and less concerned with how the services are provided

- End user customers need advice and assistance in obtaining desired services. Fox can provide this role and would be interested in marketing an end-to-end offering making use in part of a muni network

- Fox is interested in a provisioned offering – would like to buy a committed data rate, not dark fiber

- Fox is very interested in being included in an ongoing dialog

Fox Internet sees itself as a facilitator providing services to end users, not necessarily as a provider of raw connectivity. In the best of all possible worlds, Fox would like to have access to a mix of carriage-only and provisioned service providers, with the ability to purchase flexible bandwidth that could be configured as desired and over-configured if needed without incurring excessive charges. Fox is quite aware of the ongoing activities and strategies of the major incumbent providers. Fox is interested in participating in ongoing discussions regarding connectivity on the East Side.

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King County-Economic Development

- Do not know of any case of a business not locating or leaving the region due to lack of connectivity

- Focus on how to stay in and grow businesses

- Region has suffered because of lack of cooperation. Have failed to recognize that:
  - It's a 4-county area (generally referred to as Seattle)
  - We are knowledge-based innovative leaders
    + High Fashion (Nordstrom's)
    + Software (Microsoft)
    + Retail (Cosco)
    + Dotcom (Amazon)
    + Tacoma (Russell Campus)
    + UW (Center of R&D)
  - Washington has one of the highest unemployment rates
    + Workforce development is critical

- We took Boeing for granted and are doing the same with other businesses
  - 70% of businesses are small and do not get the attention they deserve

- Complement each other, rather than compete
  - Not moving into a partnership and collaboration is a determent
    - Example White Center – economic disadvantage area – encouraged Seattle to incorporate them

Public-private partnerships, collaboration, and just marketing are a key to the region's success. We are a region. We work in one community, and live in another. Continuation of treating the area as a collection of cities will be detrimental.

Kirkland Business Session

- Public transient coordination needed
  - Partner, not just the state or the county

- Concept of connectivity is important, but not all people understand what it means
  - Education is needed
    + What is connectivity? Capacity?
    + What is mis-understood and mis-applied?

- If a business needs Internet or other connectivity, they will find it
  - Businesses look at other costs and services before connectivity. Connectivity is important, but is a lower priority when compared to water, taxes, electricity, etc.
  - Smaller businesses may have a more difficult time in locating services

- City should keep track of all connectivity infrastructure (fiber, copper, other)
  - Have information on fiber routes and access points readily available

- Lack of information slows down the time it takes for a business to get connected

- Stop the Spam. Need a filter to block Spam out, or regulations to prevent Spam.

- Imaging Systems (participant)
  - Document production (scanning)
  - Storage (paper and electronic)
  - CD/DVD/FTTP/Host and Post

- Police/Fire access to on-line as-builds

- Chamber Clients
  - Most immediate issue is the cell phone coverage
  - Blackberry's other "smart" device will become more of a necessity
  - Other issues are more abstract
  - Long-term issue is security

- E-mail address portability will help facilitate change of ISPs

- ISP generally limits file size to 5 Mbps or under
  - Starting to cause a problem for cable modem and DSL users
    + Issue not just local – but national

- Working at home will increase, but will not eliminate "office" time altogether
  - Shared space
  - Hybrid office/work at home

- E-commerce will continue to grow; days of phone orders are on a decline

- Kirkland needs to keep up with the Jones in Pugent Sound
  - Perceptions are important and may not match reality

- Kirkland never gets asked the connectivity question – it's assumed that it is available

- Incubator business environment
  - Start a new business or idea
  - Eventually will move out of Kirkland due to lack of space

Having up-to-date information on the availability and cost of connectivity services is important. Information is not for the larger users, but for the small businesses. At this time, education and training on how connectivity services may improve productivity is more important than the availability and affordability of services (if you do not know how to use it, you do not need it).
Wireless access needs will increase. The regions terrain will present a challenge, as seen with the voice coverage (voice traffic is more forgiving than data traffic).

Kirkland Economic Partnership (KEP)

- KEP formed January of 2003, and started operation in May of 2003.
  - 2 employees (1 FTE)
  - Partnership between the city and the chamber

- Connectivity vs. content
  - Content maybe more important today than connectivity for most users
  - "Prospector" Economic Development tool, Internet-based
    + City GIS System
    + Census data
    + Developers provider base information
      + Data on connectivity not always accurate

- Kirkland has a niche – it's the place where products and services are created and developed
  - Do not have a lot of land
  - Place where the next big idea will be created
  - Once the business expands, they need to move
    + Bio Tech example: 0 to 300 employees in under 7 years

- Kirkland is the place that CEO's like to live

- Carlion Point – high-end industrial development
  - Wireless access
  - Developer arranges connectivity and other access

- Kirkland residents and businesses are early adaptors
  - New hotel downtown Kirkland – 40" plasma monitors in each room

- Totem Lake Mall may need better connectivity

- Kirkland
  - Innovative
  - Customer service
    + We will meet your needs
    + Make it easy
    + Don't overlook the mundane or little things

- Bellevue developers overbuilt, therefore lease space is relatively inexpensive. Have lost some businesses because of this.

Prospector is a great tool for information access. Providing greater detail on the availability and cost of services may be beneficial in the moderate term (providers or others may need to keep information current beyond the developers, may be necessary for this). Wireless access in community spaces may help provide the "incubator" image. KEP seems willing to help facilitate and encourage contact and relationships between the city and area businesses.

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Kirkland Residential

- Ownership structures of telecommunication and cable television providers is a deterrent in the U.S. today
  - Control of Infrastructure and content
    + High prices
    + Limited choices
    + Limited performance
    + No incentive for innovation

- Requiring telecommunication providers to lease access on infrastructure has helped the DSL offering
  - Cable television providers should be required to do the same

- Free Wi-Fi in library works well
  - Expansion to public places desirable

- Can the city provide free connectivity services?

- Delivery of information to citizens
  - Need the ability to filter to avoid overload

- Balance of connectivity and applications

- Video monitoring
  - Want to know if other children are at park (is there someone to play with?)

- Provide fiber connectivity to the neighborhood, and then allow anyone to access, set up neighborhood materials, etc.
  - Peer-to-peer layer connectivity

The needs and perceptions of the residences will vary greatly. The two attendees at the session favor an aggressive involvement of the City of Kirkland in providing connectivity services and/or access. The survey results will provide a broader base input of the needs and desires of the residences, and their viewpoints on the preferred role for the City of Kirkland.

Lake Washington School District

- Serves multiple communities, covering 75 sq. miles
  - Kirkland
  - Redmond
  - Snohomish
  - Unincorporated areas of King County

- Has 48 schools (42 sites)
  - 22 sites connected by fiber
    + 13 with King County INet (dark fiber lease)
    + 6 with City of Redmond (city conduit, school fiber)
    + 3 with City of Kirkland
  - 20 sites are connected with T1s

- Fiber Strategy
  - Do not compete with private sector on services to households (Atlanta lawsuit)
  - Collaborate with other public entities
  - Avoid duplicate fiber routes (i.e., if another public sector fiber is installed, share it)

- District has 10,000 devices (8,000 PCs)

- In process of installing ceiling mount projections (LCD) in every class
  - Support of web casts

- Electronic white boards under consideration
  - Publish to web site
  - Replay via web

- Internet traffic will continue to have substantial increases
  - Movement towards video streaming
  - Digital content (access on-line)
    + Video clips
    + Etc.
  - Web conferencing
  - On-line magazine subscriptions
  - Web broadcasts (important since cannot reach all households with PEG access and PEG access not uniform throughout district)
    + Plays
    + Sporting events
    + Guest speakers
  - Project demonstrations by students

- Portal implementation
  - Open web for students
  - Internal for other functions

  HP and Microsoft helping with implementation

- City of Redmond would like access to school facilities. Desires include:
  - Fiber access between school and police station
  - Wireless hot-spot access for police force (GRPS used today)
  - Video monitoring of parking lots

- Limited video monitoring of halls done today (Redmond High School)

- Collaborate with city or other public entities
  - Where do the infrastructures meet?
  - How can the organizations benefit mutually by sharing of content?

- Commercial wireless providers do not have the best coverage – how can leverage of public facilities help?

- District Sharing
  - Had limited conversations
  - Limited benefit of seat license purchases, etc.
  - Interconnection would be great, but not sure what would be done
  - Two schools (one in Redmond, one in Bellevue) may be more cost effective to connect to via a Bellevue fiber network

- K20 member
  - Purchase Internet from K20 and INet (redundancy and cost savings)
  - DS3 capacity on K20 side
    + Base price plus metered fee
    + Required to purchase at least one connection (based on T1s)
  - INet used to level traffic, reduced overall cost by 50%

- Responsibilities
  - School: What is happening?
  - Municipal: Safety
    Community service

- Nurses – connect to hospitals?

- Transportation
  - AVL for buses
  - Entry/exit recording of students using buses

Lake Washington School District is and will continue to be a key alliance – both locally and in any Eastside collaboration fiber infrastructure efforts. In addition, the school district alliance extends beyond infrastructure. Sharing and creation of joint content may increase service levels and reduce operating budgets. The school district however, is not likely a source of operating revenues. The benefit with working with the school district is an overall reduction of implementation costs. Also, access to school properties may help reduce overall costs of deploying a wireless network.

Lake Washington Technical College

- Main campus, plus one future remote site
  - High Tech Center (IT programs) being opened in Redmond in the next year
    + 20,000 square feet
    + T1 planned for data
    + 2 to 3 POTS line for voice

- Served by Verizon (telephone)
  - Looking at replacing the schools PBX in the next 3 to 4 years (VoIP likely)

- Regional exchange of information:
  - Looking at a partnership with Evergreen Hospital (support programs and library)
  - Center of Information Services (CIS)
    + South end of Kirkland
    + Connection for K20 (all schools connecting to K20 are through the CIS)
      + CIS is the ISP
      + If CIS goes down, the college data connection is down (does not happen often)
      + Use VPN in addition to connection

- 5,000 students (2,900 FTE equivalents)
  - Have high school on-site (300 students)
  - AAS/AAST degrees
  - 100 to 150 students in IT program
  - Most students are from the Bellevue area
  - Job displacement/retraining focus (Adult Basic Education)
  - Average age is 35

- Connectivity issues
  - Looking at bandwidth throttle (Napster/Kaza use)
  - Security – will be an increasing concern as more PCs are added and wireless access grows
    + Have 1,500 computers; 500 more being added
    + Few students have their own laptops
    + Proactive bandwidth monitoring needed
      + CIS monitors traffic, get reports on a 1 to 2 day delay
      + Need on-line monitoring to identify and locate “hogs” quicker

- Data connectivity needs growing – we are just as a starting point
  - Expand wireless networks (need to address accountability and security)
    + New building will have more laptops
    + Have 802.11b&g at two locations in main campus today (limited use, however)
  - Video conferencing – generally goes to CIS facilities
    + Have equipment on site but prefer a group setting at the CIS – will migrate towards webcasts
  - GED/Assessment labs are secure
  - Acceptable use standards need development

- Some work with high school
  - Computer lab (60 stations)
  - Night classes

- Community colleges are underway with a re-serving project ($27M – 7 year project, started 3 years ago)

- OSPI funding (Offices Supporting Public Institutions) – K-12 System

- Will not go as in-depth on on-line courses as BCC
  + Will do some hybrid (online and onsite)

Lake Washington Technical College has limited need to connect to facilities outside of the main campus. They currently are connected, via fiber, to the CIS in Kirkland. They desire a fiber connection to their planned Redmond facilities. In the next 3 to 5 years, higher capacity connections to the hospital and selected high schools may be of benefit. Although the Technical College need is not extensive, they are not to be overlooked. Coordination and enhancement of connectivity services is an important regional goal. In addition, IT support to area businesses and institutions may be possible in conjunction with their IT program, and may be enhanced with improved local connectivity.

Manpower

- Temporary staff provider (Milwaukee, WI based) for:
  - Light industrial
  - Office and administration
  - Professional services

- Demographic differences within Bellevue
  - Crossroads is quite different than Bellevue Square
  - Are there apartment buildings that are underserved?

- Lack of connectivity is not a key issue today, but will be. Access to technology is more than getting the wire into the building, then getting management to understand its benefits

- Why is data not as simple to plug in 'as a telephone?'

- Potential underserved areas:
  - Crossroads Mall
    + Has a wireless hot spot in conjunction with the library
  - Factoria Mall

- What are the security issues with wireless?

- Not everybody thinks like technical people

- Small to medium-sized businesses are more likely to be underserved
  - You don't know that you are going slow until somebody tells you

- Business retention – connectivity or access to technology is important, however:
  - Not as hot an issue since the "dot-com" busts
  - Businesses have moved due to traffic and taxes, not connectivity

Manpower will not be a big benefitter of improved connectivity. However, connectivity will be a growing need, especially for small to medium-sized businesses. Education is just as important as the access itself. If you don't know how to use technology or understand/accept its benefits, access is of limited value. Understand segmentation, not all areas in Bellevue have the same availability and affordability. Identification and targeting underserved areas may be important.

Return to Exhibits

Northshore School District

- Have been working with Bothel, Kenmore, Woodinville, and other communities on building a joint schools/municipal fiber network
  - Supports telephone, data, and cable television services to schools
  - Working on two connections to Bothel Community College (City of Bothel Fiber)
    + District's access to K-20
  - Connection to UW is desirable (may be able to gain access via Bothel Community College)
  - Partnership with Kenmore important to close the loop

- Can long-distance be reduced or eliminated?
  - Calling parents often requires long-distance calls.
  - Least cost routing (crossing a LATA) would be beneficial, but is it legal?

- Cannot support commercial traffic (some fiber via County INet) but allows partnerships with other government organizations
  - No partnerships with Snohomish or King County have been explored
  - Woodinville joint cost sharing
  - Kenmore did not support, no INet

- 29 schools, plus 8 administration facilities (31 school sites plus administration)
  - Downtown Bothel site will eventually be abandoned

- Use both K20 and King County INet
  - INet
    + Sees 3 to 4 home outages from time-to-time
    + County cannot afford to lose it
      + No purchase clause in franchise agreement
      + Asset to go up for sale at end of franchise if not extended
      + Comcast may have no intent to support it
    + Wants to be an ISP

- District pays into and receives USF

- Existing phone system (internal) plan to operate to 290

- Fiber strands
  - Elementary schools – 6
  - Junior high schools – 12
  - High school – 24

- Run Gbps Ethernet between schools
  - 100 Mbps to desktop
  - 8,500 computers

- Verizon and Comcast continue to add new charges

- Looking at increasing the use of security cameras

- Bothel interest in traffic light control

- Chelan County PUD is concerned about SB6598. They have indicated that the district may have to remove fiber attached to their electric distribution poles. Depends upon what is definition of end-user services. If defined as users of electric poles, then the PUD will not be able to provide pole attachments.

- Fiber benefits
  - Take control of network
  - Provide enhancement services and support new applications
  - Reduction of ongoing costs
  - Need at least 100Mbps plus between schools today(T1s are not adequate)
  - Consolidation and aggregation of services
  - Avoid long-distance charges
  - Improve security (police access and monitoring)
  - Improved dispatch of fire and other safety services

Management of fiber segments will be important when expanding the city and school networks into a regional one. Particular attention will need to be paid to how a given fiber segment was obtained and financed (industrial and commercial use restrictions). Although the Northshore District plans will not directly impact the Kirkland business plan development, their activity provides yet another example of the need for a public fiber infrastructure. The current connectivity services available from Verizon and other providers are inadequate to support the schools today. The lack of capacity restricts the introduction of new education applications.

Return to Exhibits

Northshore Utility District

- Have not allowed third parties to lease space on water towers or other structures

- No point-to-point fiber installed (have some fiber at main facility)

- Have 25 remote sites (lift stations, etc.) that are on the SCADA System
  - Controlled with point-to-point OPx lines ($17 per month per end)
  - Looking at 928/952 MHz MAS radio (concerns with terrain, however)

- Use some WiFi at main facility

- Have one PRI (T1) for voice plus a DSL server for the Internet
  - DSL is $68/month (Verizon infrastructure, T1 Net is the ISP)
  - PRI is $800/month without long-distance
  - Long distance is less than $40.00 per month

- AMR is of interest
  - Looked at PSE (Schlumberger) offering, but are concerned about the proprietary approach
  - Have 200 sites with RAMAR technology – not pleased with RF coverage, moving towards Sensus' technology
  - On-demand reads would be nice
  - Not concerned with peak demands

- Serve 20,000 accounts
  - Account balance look-up over the Internet
  - Do not take credit cards

- SCADA
  - Considering upgrade
  - Move away from FSK technology
  - Virtual Network Computing (VNC)
  - Telemetry integrators can work with SCADA via VNC (if static IP)

- Not placing any conduit when streets opened up

- Future connectivity needs/desires
  - Sharing of GIS data real-time with builders, contractors, etc.
    + Parcel tax ID
    + On-line GIS browser
    + Are an ESRI shop
  - Remote Internet access from the trucks (desire w/o consideration of budget)
    + Wireless coverage concerns
    + Education of users

- 65 employees (25 in the field)

- Have a 2 channel, VHF model radio system
  - Have some Nextel radios, but would likely move away from them
  - Did not join the County 800 MHz radio group

As a potential user, the Northshore Utility District is of little interest. If Kirkland was to develop a wireless data access station to police, fire, and other vehicles, the district might have an interest (40% territory overlap). This overlap will, however, be reduced by the planned annexation (City of Kirkland will then assume some of the North Shore Utility District operations). Abandoned water mains, ROW access, etc. may be of interest in a regional connecting effort.

Overlake Hospital

- Connection desired from hospital to Onyx building (crosses I405) in next 6 months
  - Moving 200 people to location
  - City INet connection may fill their needs

- Have clinic in Issaquah
  - T1 for phones, etc.
  - Need more bandwidth for images – 100 Mbps minimum

- Washington Imagery
  - Based on Overlake Campus
  - Leasing OC3 to Issaquah
    + 360 Network spur goes to Issaquah

- Interested in connections to other facilities
  - Virginia Medical (Seattle)
  - Children's Hospital (UW Clinic)
  - PAC Lab
  - Blue Cross/Blue Shield

- PAC System will be up this summer
  - 20 to 300 MB radiology images

- Have 10 Mbps connection today
  - $3,000 per month + $75/Mbps over 10 Mbps

- Use a smattering of T1s (5 plus) for voice. Also have over 40 analog lines

- $300M expansion underway. Planned completion is 2007

- Doctors' offices are spread out
  - Connections to individual offices are up to them
  - Not sure if they can get connectivity at each location

- Evergreen Hospital connection is desirable
  - 45% of physicians practice at both facilities
  - Cardiac surgery is done at Overlake

Overlake has limited direct needs for connectivity within Bellevue. The only facility outside of the main campus is the Onyx building, which appears that connectivity can be obtained by using the city's INet fiber. Indirectly, however, physicians' access to affordable high capacity services will become more and more critical. In addition, Overlake is extremely interested in regional connectivity, including one to Evergreen Hospital.

Pachena Light Consulting

- Early pioneer in basics of data connectivity
  - Worked on design of cable modems
  - Worked on early DSL protocols
  - One of the first to actually build significant FTTH implementations

- Strong belief that connectivity should be built and managed like public highway system
  - Should be Ethernet from the beginning
  - Should be basically a data network with analog traffic digitized or enveloped
  - Should be all fiber, all the way

- Model for connectivity entity should be 'carriage only' with services provided by 'tenants' making use of network

- Connectivity entity should offer connections free to the end user with costs covered by 'carriage fees' paid by 'tenants'

- Connectivity entity should be structured as a break even utility, preferably regional in scope

- First step in implementation should be connecting Public Sector sites
  - Municipal Government
  - Educational entities

- Justification is search for better, faster, cheaper Public Sector functioning

- Implementation of Public Sector connectivity can be financed by improving delivery of municipal services and reducing operating expenses
  - Fire stations loose paid hours for training sessions at central site
  - Energy Management has potential for significant economies
  - IP telephones would result in significant cost savings
  - Centralized control of traffic lights improves traffic flow, saves energy, reduces pollution
  - Remotely controlled intersection cameras can improve safety
  - Remotely controlled cameras can reduce need for police patrols

- Implementation of Public Sector connectivity provides schools with opportunities
  - Expand reach of Certified staff, allow presentation of advanced material to multiple classrooms
  - Address pressing requirement for teaching students who speak second language at home
  - Allow increases in school security through remotely monitored cameras in schools
  - Improve parent participation through increased two way communication
    + Notes, assignments posted by teacher
    + Email communication available between parent and school staff
    + Cameras in classrooms allow on line awareness of classroom activities

- Key to long-term financial viability of connectivity entity is availability of attractive services

- Rich mix of Public Sector services will be initial cause of residents demanding access in the home

- Lack of access to television programming and motion pictures may doom model – legislation may be required

Return to Exhibits

- Fiber to homes should initially be 100 mbps link with system capable of providing gigabit link to each home

- End game is fiber everywhere

Very strong belief that connectivity should be viewed as and implemented like public roads, including elements such as taxpayer support and eminent domain. Feels that 'carriage only' links could and should be offered at no charge as part of a mix of connectivity and services, and expects that if this mix was properly constructed the cost of the link could be paid for through the premium fees charged for the supposedly highly desirable services carried on the link. Has built and managed a significant real world implementation of this concept which failed due to inability to obtain rights to the highly desirable services from incumbent holders.

Puget Sound Energy (PSE)

- Automatic Meter Reading (AMR)
  - Contracted with Schlumberger
    (acquired assets from CellNet Data Systems)
  - Licensed Multiple Address System (MAS) Radio (928/952 MHz)
  - 80% to 90% of meters read by the RF network
    + Over 1M meters connected
    + 70K cannot be reached
  - CellNet was active in working with Honeywell on development of security monitoring (development status uncertain at this point)

- Involvement with Bellevue Economic Development Partnership

- Belfield Office Park may be a target for fiber connectivity

- Watching BPL technology
  - No plan to implement
  - Business case appears questionable

- Facilities
  - Headquarters in Bellevue (central business district)
  - 24 hour dispatch center in Redmond (OC3 microwave connection)
  - Crossroads (4 to 6 T1s to facility)
  - Factoria Service Center

- Connectivity
  - 200 miles of fiber
  - Key facilities and interchange points are connected
  - 40 microwave sites
  - Use telco circuits (leased multi-drop circuits and MAS radio) for remote SCADA sites
  - 30 sites (substations) on 4 second polling cycle
  - Not looking at changing in next 3 to 5 years
  - Video monitoring may be of interest in the future

PSE does not have immediate needs for fiber connectivity from the City of Bellevue. In the 5 year plus time frame, converting to their substations to fiber may be of interest (map of locations coming). PSE does have fiber along the I-90 corridor, and may offer an opportunity to reduce fiber costs of a regional connectivity plan. Connecting to the Crossroads facility to the Headquarters may offer a short-term opportunity. An alternate route to the Redmond dispatch center could also be a longer term interest.

State Director of Information Services

"Connectivity is one of the most important economic development tools we have today and in the future."

Stuart McKee

- Create economic incentive for private companies to invest
  - Private partners important - politically and for consumer buy-in

- Gathering information is good
  - Expectations of long-range planning is often too high
  - Create a plan to gain momentum; get things moving

- K20, IGN, and SGN Shared Backbone
  - Each has a different set of customers
  - 496 entities with at least a T1
  - Evolving from frame relay (T1 or less) to a 10 Mbps backbone
  - OC3 connections between cities
  - Last-mile is an issue
    + Wireless may be needed to last 20%

- Benton county "lighting up" 8 square miles via wireless ($500K investment)

- Other contacts
  - OSPI (Marty Gaybell)
  - Department of Health (Frank Westrom)
    + Seeking rural health network funds
  - Department of Transportation (Sec. McDonald)
  - Emergency Management

- Concerns with Grant County PUD connectivity efforts (ethical and liability issues)

- Eastside regional community network is desirable
  - Potential anchor tenants
    + BSD
    + BCC
    + Healthcare
      + Overlake
      + Evergreen
  - Bellevue School District is behind (other districts have fiber to more than half of the facilities)

Be cognizant of potential legislation that may place limits on public connectivity infrastructure efforts. The roll-out in Grant County has raised questions regarding the involvement of public entities in the telecommunications industry. Collaboration among public entities and seeking alliances with the private sector will be critical.

U. S. Bank

- Main building downtown Bellevue
  - 4-1/2 floors (including lobby)
  - Serves:
    + Commerce
    + Dealers (autos)
    + Private
    + Residential Real Estate
    + Individual Banking – Lobby (branch)
  - Have approximately 120 employees in Bellevue

- Eight branches on the eastside
  - I.T. support from Bellevue
  - Branches do not exchange information with each other
  - All communications to Seattle or Portland

- Headquarters are in Minneapolis, MN
  - Standardization of processes, applications, and systems is critical
  - 8th largest bank in the country

- Today an office staff person has the output of 2 to 3 people of the past. Automation is critical; access to information is critical

- Security concerns (data security and personal safety) limit on what information the bank personnel will have access to remotely
  - Email requires special approval
  - No remote access to LAN allowed

- Cable modem service at home (Comcast) is inconsistent

- Retention visits to businesses
  - Telecom was a big issue
  - Long-distance is frustrating
    + Why is Bellevue to Redmond and Woodinville a long-distance call?
  - City must be the visionary – private sector is only profit-driven
  - Biggest issue is transportation
  - Finding qualified employees was difficult 5 to 6 years ago (not a problem today)

- City must realize that customers are well informed, educated, and demanding.

Directly, U.S. Bank does not have a need for city connectivity services. However, they have been involved in Chamber of Commerce efforts and felt the city needs to be the visionary. The need for affordable connectivity services is and will continue to be an important economic decision. The city needs to make a commitment, force a decision to be made, and be held accountable.

University of Washington Computing & Communications (C&C)

- Everyone recognizes that the dot com bubble has burst
- Major current task is to stitch networks together
- Only a few UW sites are located in Bellevue or Kirkland, no major facilities
- High speed is no longer T-1 equivalent but is at least 10 times that.
- High speed link (as now defined) is a basically good thing that enables many other good things
- A major UW activity has been establishing, operating and expanding the Pacific NW Westin Gigapop
- UW has been and will continue to be involved in leading edge connectivity initiatives such as Internet2
- UW has provided both technical assistance and shared routes to public sector organizations such as the K-20 network and the King County Inet
- UW sees WCTC CIS organization as shifting roles from being a technical assistant to being a service provider
- Connectivity provided by UW and utilized by UW is moving towards openness, away from proprietary models
- UW is very interested in partnering to implement new or extended high speed connectivity
- UW sees Pacific NW as becoming a center of connectivity for entire Pacific Rim, especially because of new undersea cable landings in area
- UW is very interested in ongoing interchange of technical and connectivity planning information with public sector organizations of all types
- UW sees merit in the Internet Educational Equal Access Foundation (IEEAF) as an 'honest broker' and UW is actively participating, including providing the current Vice Chair
- Significant potential synergy is seen if Bellevue Community College, Boeing, Microsoft, and the UW Bothel campus could be linked by high speed connections

The University of Washington is actively engaged in encouraging the extension of and actually extending high speed connectivity throughout the area. The University is not in a position to unilaterally implement high speed connectivity to all the points which the University would like to see linked. They strongly believe in partnerships and look for partners able to make real investments in planned projects. The University feels that high speed links can and should be put in place in advance of need. They have seen many cases where the fact that high speed links were in place allowed linked entities to take part in leading edge projects that were not on the planning horizon when the high speed links were implemented. The University is very interested in establishing an ongoing dialog in order to gain a better understanding of the area's needs and to do a better job of communicating the University's plans to the area.